Educactional Opportunities

- M.Sc. or Ph.D. degrees in underwater acoustics or marine bioacoustics - Centre for Marine Science & Technology at Curtin University in Perth, Western Australia

State: NSW | VIC | QLD | SA | WA | Online / Distance

New South Wales

<table>
<thead>
<tr>
<th>Institution:</th>
<th>The University of Sydney</th>
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<tbody>
<tr>
<td>Location:</td>
<td>Faculty of Architecture, Design and Planning</td>
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<tr>
<td>Course Title:</td>
<td>Graduate program in Architectural Science, Audio and Acoustics stream (Graduate Certificate, Graduate Diploma, and Masters by coursework)</td>
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<tr>
<td>Contact:</td>
<td>Dr Densil Cabrera</td>
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<tr>
<td>Course Description:</td>
<td>This graduate coursework program offers a balance of study in acoustics, audio, and architectural science.</td>
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<table>
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<tr>
<th>Institution:</th>
<th>UNSW Australia</th>
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<tbody>
<tr>
<td>Location:</td>
<td>On campus</td>
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<tr>
<td>Course Title:</td>
<td>MECH9325 Fundamentals of Acoustics and Noise</td>
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<tr>
<td>Contact:</td>
<td>Assoc Prof Nicole Kessissoglou</td>
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Victoria

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<tr>
<th>Institution:</th>
<th>RMIT University</th>
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<tr>
<td>Location:</td>
<td>City Campus</td>
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<tr>
<td>Course Title:</td>
<td>Audio Engineering</td>
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<tr>
<td>Contact:</td>
<td>Prof Xiaojun Qiu</td>
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<tr>
<td>Course Description:</td>
<td>Overview of Learning Activities:</td>
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<tr>
<td></td>
<td>- Weekly 2-hour in-class lectures</td>
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<tr>
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<td>- Weekly 2-hour laboratory practices</td>
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Lecture Topic:
1. Introduction and psychoacoustics
2. Speech production and analysis
3. Speech and audio compression
4. Hearing aids
5. Audio mixing
6. Mid-Semester Test
7. Electroacoustics: microphones, speakers and amplifiers
8. Room acoustics
9. Sound absorption
10. Sound transmission
11. Sound mufflers and sound field control
12. End-of-Semester Test

Laboratory Topic:
1. Tone and Noise (Excel and Adobe Audition)
2. Speech Compression
3. Sessions and Mixing on Non-Linear Media Mastering
4. Electro-Acoustics - Sound Level Meter and Microphone Sensitivity Measurement
5. Background Noise and Room Functionality
6. Room Acoustics II - Sabine Equation
7. Transmission Loss/Insertion Loss

Queensland

Institution: The University of Queensland
Location: St Lucia campus
Course Title: AUDL7800 Acoustics and Psychoacoustics in Audiology
Web Link: http://www.uq.edu.au/study/course.html?course_code=AUDL7800
Cost: You must be enrolled in the Master of Audiology Studies program to undertake this course.
Contact: Dr Wayne Wilson
Course Description: AUDL7800 is an introductory course within the Master of Audiology Studies program. It uses lectures and practicals to introduce students to the perceptual (psychoacoustic) properties of sound. After successfully completing this course, students should be able to:
1. Demonstrate an understanding of the principles, methods and applications of acoustics as related to audiology.
2. Demonstrate an understanding of the principles, methods and applications of psychoacoustics as related to audiology.

Western Australia

Institution: Curtin University
Location: Bentley Campus
Course Title: MCEN6007 (v.1) Engineering Noise Control
Contact: Assoc Prof Ian Howard
Course Description: Syllabus: Acoustic wave propagation; Sound pressure dB scale; Properties of acoustic disturbances; The one dimensional wave equation; The wave equation in a diffuse field; Composite transmission loss; Noise levels outside enclosures; Transmission loss characteristic.

South Australia

Institution: The University of Adelaide
Location: City Campus, North Terrace
Course Title: MECH ENG 4115 / MECH ENG 7027 Engineering Acoustics
Contact: Assoc Prof Carl Howard
Course Description: The Engineering Acoustics course provides learners with knowledge in acoustics that is suitable for employment as a ... to make informed design decisions for product development. The topics covered in the course are:

**FUNDAMENTALS OF ACOUSTICS**
- wave equation and its application
- sound power, sound pressure, energy density and sound intensity
- plane and spherical waves
- sound pressure addition and subtraction
- noise reduction combination

**INSTRUMENTATION REVIEW**
- noise measurement instrumentation
- practical measurement procedures

**NOISE CRITERIA REVIEW**
- various measures to quantify noise
- hearing damage risk
- speech interference
- ambient noise specification
- occupational and environmental noise criteria
- psychoacoustics

**SOUND SOURCES and OUTDOOR SOUND PROPAGATION**
- monopoles, dipoles and quadrupoles
- line sources
- coherent and incoherent plane sources
- directivity and reflection effects
- sound propagation outdoors; ground effects, air absorption, atmospheric turbulence and temperature

**SOUND POWER**
- radiation impedance and the radiation field of a sound source
- sound power measurements
- sound pressure measurements in the laboratory and in the field
- sound intensity measurements
- surface vibration measurements.

**SOUND IN ENCLOSED SPACES**
- low frequency analysis
- high frequency analysis
- reverberation time, reverberant and direct sound fields
- sound absorbers
- measurement of the room constant
- prediction of sound levels generated by interior sound sources
- flat and long rooms
- applications of sound absorption

**SOUND ABSORBING MATERIALS**
- flow resistivity and its measurement
- sound propagation in porous media
- measurement and prediction of statistical sound absorption coefficients

ACOUSTIC ENCLOSURES AND BARRIERS
- sound transmission loss, STC rating, single and double walls
- acoustic enclosure design
- acoustic barrier design
- pipe wrappings.

ACOUSTIC PREDICTION SOFTWARE
- ENC: engineering noise control software
- SoundPlan

Online and Distance Courses

Institution: The University of New South Wales
Location: Online
Course Title: Physclips: a multi-level, multimedia introduction to mechanics, oscillations, waves
Web Link: http://www.animations.physics.unsw.edu.au/
Cost: Free
Contact: Prof Joe Wolfe
Course Description: Physclips is a multi-level, multimedia introduction to physics. The first chapters, on Mechanics, Waves and Sound, are immediately relevant to acoustics. Physclips is not a course: it has no tests. Rather, it is a set of resources:
- Rich multimedia tutorials may be used as lessons or reference.
- html pages give both deeper and broader discussions.
- Movies and animations may be downloaded by teachers for use in their own lessons.

Physclips is supported by Australia's Office for Learning and Teaching and the School of Physics at UNSW.

Institution: UNSW, Canberra
Location: Online / Distance
Course Title: Professional Education in Acoustics
Cost: Details available from webpage
Contact: Marion Burgess
Course Description: This professional education program is aimed at providing appropriate short courses to meet the needs of those embarking upon a business career in acoustics. The program is fully flexible and can be commenced at any time.